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ABSTRACT

While no one method can possibly solve all the problems in an educational system, the Personalized System of Instruction (PSI) addresses many. The PSI method is a self-paced, mastery learning approach based on reinforcement and personal attention. It is typified by five characteristics that help to meet or minimize the adverse aspects of traditional instruction: (1) mastery learning, (2) self-pacing, (3) a stress on the written word, (4) proctors, and (5) lectures to motivate rather than to supply essential information. PSI assumes that if activities are to produce positive outcomes, learners must be allowed to learn at their own rate; learning should occur in small, sequential segments; and several trials should be allowed for students' success. The PSI model is ideal for teaching the basic speech communication course. An effective communicator uses psychomotor skills that often demand practice, feedback, and repetition to be successful. The PSI model provides students with immediate feedback for making corrections without penalizing them for mistakes, allows the flexibility of self-pacing, and provides the student with individual help. Use of the PSI model in a basic speech course, however, reduces the number of students listening to classmates' presentations, because self-pacing requires that some students continue in the course while others give speeches. While not appropriate for everybody, the approach may be used by teachers interested in having students learn at their own pace and willing to give up the traditional role of instructor. (HOD)

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THE PERSONALIZED INSTRUCTION MODEL IN THE BASIC SPEECH COURSE

Fred Keller wrote in his diary in March, 1963, that the Personalized System of Instruction (PSI) is "one of the most exciting and most radical <courses> ever given in a university setting."1 A month later Keller wrote:

> The Education program...represents a distillation of many things: the method of laboratory teaching at Columbia—in Psychology 1-2 and Psychology 127; the method used at I.B.R.; the use of programmed instruction where possible; the treatment of text-books, lectures, conferences, etc., as rewards for passing through various stages of individual study and experimentation; the use of lectures as inspirational rather than truly instructional; the measurement of progress by compilations of things the student has successfully done, rather than by grades on examinations.2

Little did Keller know at the time of the above writing that the plan he described would be used in over six thousand courses and in almost every discipline.3 It has also been reported that the PSI method is presently being used by over thirteen hundred individuals on the university and college level and that 80.5% of those surveyed represent four-year institutions.4 The purpose of this paper is to explain the theoretical base behind the PSI method and to discuss the advantages and disadvantages underlying the PSI model in the basic speech course. Before examining the theoretical base of the PSI method, I would like to provide a brief rationale for its development.

Rationale for PSI

In the early 1960s, individualized instruction began to resurface at a variety of levels: the Montessori preschools, founded in the early 1900s,

reappeared after a considerable absence; Glaser's Individually Prescribed Instruction and Flanagan's Project Plan provided educational methods on the high school level; Postlethwaite developed the Audio-Tutorial Method; and Bloom wrote on Mastery Learning for the college level. In the hopes of making learning more efficient and reinforcing, Fred Keller and others developed PSI.

Some of the problems with our educational system that led to the development of PSI are still with us—Sherman writes, "Since 1905 evidence of private unhappiness with teaching has surfaced repeatedly to the point of public distress."5 He goes on to point out that whenever the outcry became an issue, particularly a political one, there are those who look for something to change. The search for the best way to teach has taken many directions depending upon who the reformers are and what they are after.

One direction to take is to pump more money into the system. In the 1950s and 60s monies were earmarked to improve the physical facilities of our schools. The result was schools with all different types of architecture, better lighting, more attractive colors, more spacious rooms, and chairs that were movable. In addition, multiple technology was added to the classroom including audio-visual aids and other hardware to help improve instruction. Much of this proved to be good for morale but little improvement in learning took place.

Then there was the approach to develop new curricula including the systems approach, programmed texts, and a variety of other programs. All of these developments have been excellent in improving the quality of the materials that are used in instruction. But, in spite of the outlay of monies for the improvement of the physical plant, innovations, and curriculum improvements, the educational crisis is still with us.

If improvements in the physical plant, new technologies, and curriculum changes were not the answer, then it must be the teacher who is at fault. It

was, therefore, thought that if we improved the quality of our training for teachers, we would surely improve student learning. But this, too, has not completely resolved our problem as to why some students do not learn as effectively and efficiently as they should. The finest and most pleasant environments, the best resources, and the best trained teachers are certainly important to our educational system, but in the final analysis it is the student who must learn if our system is to be successful.

Most of present-day learning is based upon punishment. A recent conversation with a colleague illustrates this all too clearly. The conversation started out as follows (conversation edited and not recalled verbatim):

> "I just had a terrible class," he states. "Today was the first day of speeches and what a disaster. The first student got up to speak and with a big grin explained that she wasn't prepared to give her speech." He told her to sit down and hoped she'd be ready later in the period. The next speaker, according to the instructor, made it through the speech but it wasn't very good. The third and fourth speakers were also not prepared. In fact, the third speaker ran out of the room because she was nervous and felt sick. The instructor's explanation was, "Maybe I am too tough on them. But I am not going to be easy, either. Those who didn't get through the assignment will receive an F. What a heck of an environment to start out a speech assignment," he explained.

My colleague expressed two interesting misconceptions about the learning that didn't occur in his class: demanding more of his students will increase learning and punishment will make them try harder the next time.

Punishment, according to Sherman, has received a mixed reception by those in the classroom as either a virtue or as a crime. He adds that apparently we cannot teach with it, and we cannot teach without it.6 The effect of punishment can be rewarding to the teachers who wish to have stern discipline in their classroom, but the use of punishment can also produce negative effects

that lead to the broken will of some students and the destruction of confidence in others.

Punishment usually leads to an environment of constant judgment and evaluation with little or no room for mistakes. The end result is an atmosphere of high tension and anxiety because of the fear of failure. There is no room for mistakes when punishment whether by design or not—is the strategy. Sherman states that denying a student the right to make mistakes is humilating and can even be dehumanizing.7

The answer to tight controls in education has led to more so-called humane approaches to learning—to permissiveness rather than control—in the hopes of developing the individual. This approach has produced what has been referred to as a cafeteria education and the total freedom of students to determine their own education. Requirements in some institutions were completely dropped and in others dramatically reduced in hopes of providing a more "meaningful," "relevant," "involved," and "experimental learning" experience for students.8 But despite of all this, we still are not successful in getting all students to learn.

The bell-shaped curve or the normal curve has produced another misconception that competition leads to effective and efficient learning. This approach has helped some, but for many it has lead to mediocrity, because average then becomes the norm for learning and many students end up with a rather complacent attitude toward learning. The ultimate insult to students has been grade inflation, which has not produced better educated students but has resulted in higher grades that do not correspond to what has been learned.

While no method can possibly solve all the problems in our educational system, the PSI method does address many and eliminates some.

Theory Behind PSI

The PSI method is a self-paced, mastery learning approach, which is based upon reinforcement and personal attention. PSI is a well-grounded method of instruction and unlike many methods
has been effectively supported through research. Keller provides the following principles which provide the bases for PSI:

1. Behavior is learned through reinforcement or by the reduction of negative outcomes.
2. Punishment of a behavior leads to a decrease in the recurrence of that behavior.
3. People can learn to generalize to new situations and to discriminate between and among concepts, ideas, and things.
4. Learning is more effective when it occurs in small and successive steps.
5. When learning has occurred, it should be reinforced positively and immediately.
6. Secondary reinforcers unique to humans such as attention, approval, and affection can aid learning.9

The principles listed here do not include all that is necessary for the learning of behavior, but they are important to the foundation and pyschology behind PSI. According to Keller, the intent of PSI was to maximize the rewards for educational behavior and to minimize the chances of extinction and frustration by eliminating punishment and fear and thus facilitate the development of precise discrimination.10

PSI is usually based on five defining characteristics which help to meet or minimize the aversive aspects of traditional instruction and to maximize those aspects which are the strengths of traditional instruction. The five

characteristics, according to Sherman, are: (1) mastery learning, (2) self-pacing, (3) a stress on the written word, (4) proctors, and (5) the use of lectures to motivate rather than to supply essential information.11

The mastery feature requires that students obtain perfection in some aspects of the instruction. Keller and his associates believe that accomplishments can be detected through performance. Thus, PSI requires students to respond frequently and with responses that have consequences. Mastery is not new to the educational scene but it takes on a new meaning when applied to PSI.

The theory behind PSI suggests that, if activities are to produce positive outcomes, learners must be allowed to learn at their own rate; learning should occur in small, sequential segments; and several trials should be allowed in order for students to obtain success. Success, however, must reflect accomplishment, not the number of mistakes made along the way; and grading must be determined on pre-set standards (absolute) rather than on competitive or comparative standards (normative) if the PSI model is to work effectively. The result is to diminish the notion that some students will succeed (whatever the criteria for success) and others must fail.12

The traditional approach and the instructors who use it generally adhere to the notion of either success or failure, thereby allowing students only one opportunity to succeed. For example, in most traditional speech courses, students are given one opportunity to present an informative speech with evaluation almost always based upon that one trial. If students succeed, great, but if they fail, that's too bad—the course must go on. Students who are striving for excellence are given only one trial and, if they receive anything less than their goal, they have in their view failed. This approach to instruction, according to Scott and Young,13 is at odds with the process by which most humans learn. They suggest that most learning requires several

trials and is often characterized by a high rate of failure. Why is it that most speech course instructors only provide opportunity for students to be successful? The PSI model, when used in speech courses, requires that students be given more than one trial for each learning activity.

Inherent in the mastery approach, as used in PSI and advocated by Keller, is the second feature self-pacing. Because mastery is required in some aspect in the PSI model, it is imperative that students have flexibility to learn at their own pace. Mastery, by all students in a class, cannot be commanded on set schedule. Not all students learn at the same rate and thus opportunity for self-pacing is an important aspect of the PSI model. However, the academic calendar and the reality that some students are not ready for college require the setting of some guidelines and limitations to the flexibility and number of trials that students are allowed.

Given that not all learning can occur with one trial nor at the same rate, the PSI model allows for repeated trials. Students can repeat activities several times with no penalties. In the PSI model, students are encouraged and often required to repeat activities until they are successful, that is, to learn from mistakes rather than to be punished. The goal of PSI is for the student to master content and skills in order to complete the course as well as to receive a grade according to one's ability and not according to others' successes or failures.

Units of information in the PSI model are deliberately small, which allows students to see and realize success more often. Thus, students are not pressured to learn more than is practical at one time. In the PSI model, tests are used not only to evaluate students but also to provide feedback on what students have learned and what they need to learn. Moreover, these students are tested over shorter units of instruction, more frequently, and given immediate feedback, thus meeting the requirements of the reinforcement theory

underlying the PSI model. Because students are given multiple opportunities to be successful, they complete activities (given the flexibility of the academic calendar) when they are ready, learn small bits of information rather than large blocks (six chapters at time), and receive immediate feedback.

The last three features of the PSI model follow directly from the first two. Because some self-pacing is required, a lock-step approach of disseminating information is not possible. Written materials, therefore, become the major source of information. The reliance on the written word requires that the materials be written clearly with objectives specified, be sequenced in small steps, and, when possible, be arranged from the simple to the complex. Providing students with written materials allows them to receive identical information even when in different sections of the course.

Because the PSI model allows students to use repetitive testing and to be involved in a wide variety of materials at different times, some means must supplement and amplify student/teacher interactions. This leads to the fourth feature—the use of proctors, or as they are referred to in our basic speech course, instructor assistants (IAs). Part of any reinforcement approach, as mentioned earlier, is attention, approval, and personal concern for the well-being of the student. The proctor is able to provide all of these. The PSI model usually uses undergraduate students as the proctors, thereby providing another source of reward: the students themselves.14 The proctors are chosen from students who have successfully completed the course, are effective communicators, are interested in working with others, and have been successful in other academic requirements. The small ratio of proctor to student, generally 1 to 10, allows for a great deal of interaction between proctor and student and provides an effective vehicle for student learning. The students find the proctors capable of answering their questions and often more willing than a full-time faculty member to discuss their concerns. With

training, the proctors learn to evaluate speeches, correct and grade tests, tutor, and record grades.

Finally, the fifth feature in the PSI model, the lecture, is used differently than the lecture in the traditional model. Lecturing, not a major teacher commitment in PSI, is used to supplement and to motivate rather than to serve as a vehicle for strict information dissementation. If lectures are used, they are presented at the most once-a-week and at the least one-to-five times during a fifteen week semester. Attendance of lectures, in most PSI taught courses, is not required. Thus, teachers who choose to eliminate or limit the number of lectures can provide more time assisting students and have more individual contacts with them.

PSI has many variations. Boylan found that approximately 95% of the PSI courses include some mastery and self-pacing, that 88% stressed the written word, and that 78% used undergraduate student proctors.15 Of those responding to Boylan's survey, only 51% used lectures for the purpose of motivating students. Further, Boylan found that of 303 respondents 33% (or 99) used all five of the PSI features within their courses. According to existing research,16 students in courses which use the PSI method meet with little or no failure as long as the courses contain the basic-learning theory and individualized instruction combined with a close personal relationship among students as well as between students and instructors.17 While emphasizing five basic features, the PSI model is adaptable to the needs of the users in widely differing situations and provides numerous advantages when compared to traditional models.

Advantages of the PSI Model

The major advantage of the PSI model is that it allows learning to occur in an atmosphere that emphasizes positive outcomes. The PSI model emphasizes making students feel good about what they have learned and, yet, does not

punish them for what they have not. Students are allowed to make mistakes and to correct them with multiple opportunities for improvement.

The PSI model is ideal for teaching the basic speech communication course. Learning how to be an effective oral communicator requires a combination of complex cognitive and pyschomotor skills. The acquisition of the cognitive information to be an effective communicator requires mastery of various principles and concepts. In addition, an effective communicator requires psychomotor skills which often demand practice, feedback, and repetition to be successful. The PSI model provides students with immediate feedback for making corrections without penalizing them for mistakes, allows the flexibility of self-pacing, and provides students with individual help. While it could be argued that other models of instruction include some of these features, there is more empirical support showing the PSI model to be efficient, effective, and less costly.

In an article I recently wrote entitled "PSI: An Attractive Alternative for the Basic Speech Communication Course,"[18] I discussed the efficiency, effectiveness, and cost advantages of using PSI in the basic speech course.

I will just briefly summarize those advantages for you:
(1) Cost attractiveness—assuming all things are equal, the PSI model of instruction costs approximately one-fourth of the traditional approach. (2) Student Attractiveness—PSI is rated by students to be more enjoyable, more demanding, and higher in overall quality and contribution to learning than traditional courses. On similar exams, the achievement by students in PSI vs. traditional courses is higher by about 8%, The students in PSI retain 14% more information than those in traditionally taught courses. Students rate PSI courses higher in interaction and in the personal attention they receive. In addition, they receive immediate feedback, clear learning tasks, and are able to use their time more efficiently than in traditionally taught courses.

(3) Instructor assistant attractiveness—those who become instructor assistants (IAs) learn the course materials better, gain experience working with others, and find the participation to be very satisfying. (4) Department attractiveness—it is a low cost form of instruction, allows flexible use of staff members, creates more departmental majors, and produces larger credit hour per FTE.

Disadvantages of the PSI Model

As mentioned earlier, no method of instruction is perfect and PSI, despite what I have said, has disadvantages and limitations like any other method. Developing an effective PSI course is extremely time consuming, often requiring from one to four years. This can be excessive, given faculty members' other responsibilities.

Also, a tremendous time commitment is required of the director in the maintenance of the PSI format. That is, the director must be constantly updating the course to make it better. This time commitment may be equal to other models of instruction, but nevertheless it is a limitation placed upon the director of the course.

The PSI model reduces the number of student activities that can be effectively dealt with during a 15-week semester. In many traditional basic speech classes, students are involved in roll playing and other similar activities. In PSI, these must be limited because of scheduling.

The major limitation that I have found in our basic speech course, using the PSI model, is the number of students in attendance to listen to speech presentations. Because of self-pacing, students must be allowed to continue in the course while others are giving speeches, thus reducing the number of listeners.

Conclusion

The PSI model is an excellent method of instruction in the basic course. It uses principles and concepts which are effective and efficient for learning. It improves achievement and also is satisfying to the students who use it. It is based upon reinforcement and positive outcomes rather than on failure. It allows students to work at their own pace and at the same time to correct mistakes.

The approach isn't for everybody but is for those who are willing to allow students to learn at their own pace and who are willing to give up the traditional role of instructor. The teacher who uses the PSI model becomes a creator of classroom material and a manager of a learning system.

There are still many questions which need to be empirically tested in the PSI basic course, For example: Can PSI improve the speaking abilities of students? Can undergraduate students be trained to effectively evaluate speeches? Can undergraduate students be effective tutors in the basic speech course?

NOTES

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12. Michael D. Scott and Thomas J. Young, "Personalizing Communication Instruction," Communication Education, 25 (1976), 211-221.

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